MIGRATION RECORDS IN AUSTRALIA. 2. HESPERIIDAE AND PAPILIONIDAE (LEPIDOPTERA)

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The Hesperiidae make up a large proportion (more than 100 species) of the Australian butterfly fauna but only one has been noted as a regular migrant; the Papilionidae are represented by about 18 species of which two can probably be regarded as migrants. These two families stand in strong contrast to the Pieridae of which almost half of the 31 Australian species have been suggested or confirmed as migrants.

This note presents information on the few migrant species of Hesperiidae and Papilionidae. Similar summaries on the Pieridae and Nymphalidae are in preparation.

HESPERIIDAE

Badamia exclamationis (Fab.)

This is the only recorded Australian migrant skipper. There are several general statements in the literature which mention this species as a migrant or which refer to previous records in general terms. Despite this there are comparatively few records in which details are given.

Williams (1930) summarizes information on this species until 1929. Dodd (1933) records a northerly flight in February and a southerly flight in September-October, with speeds of 20-30 m.p.h., with counts up to 2,000/5 mins. for the northerly and smaller numbers for the southerly flight. Table I gives a summary of those records in which details of date and locality are given.

Comments. Burns (1933) provides information on larvae and life history in relation to population movements through Queensland. This, together with the data summarized in Table I shows a strong annual southerly movement with breeding in southern central and coastal Queensland followed by a northerly flight. It is clear, however, that there are considerable differences in timing and density of these flights from year to year. Similar variation is known in other migrants such as *Vanessa kershawi* McCoy (Smithers 1969). In *B. exclamationis* the southerly migration takes place over a period of a few weeks at some time from late September to early January. The northerly movements also occur over a comparatively short period and take place between mid January and the end of March. Causes of the variation in the southerly movement are unknown but the northerly movement must depend on the time of arrival from the north of the previous generation and the developmental period of the subsequent generation in Queensland as Burns (1933, p. 226) infers that the northbound specimens depart immediately after emergence. The migrations take place over a front as wide as 200 km. the specimens flying low and very fast. Large numbers of the southerly migrating generation sometimes reach Brisbane with occasional specimens occurring as far south as the Sydney area and beyond; the major migrations regularly reach the Rockhampton-Gladstone area. It is not clear how far to the north the population movements continue although Puxley (1925) suggests regular movements across the sea to and from areas north of Australia.

Table I
Summary of migration records for *Badamia exclamationis* in Queensland

Locality	Date	Direction	Reference
Brisbane	18.i - 8.ii.1923	W of S	Burns 1933
Brisbane	i.1923	NW	Upton 1949
Westwood	27.ix.1923 - i.1924	S	Burns 1933
Westwood	i.1924	SE	Upton 1949
Westwood	9-15.iii.1924	NW	Burns 1933
Meringa	xii.1926	S	Burns 1933
Meringa	1.iii.1927	-	Williams 1930
Meringa	ii.1927	N	Burns 1933
Cairns	i.1928	N	Upton 1949
Mackay	1.iii - 1.iv.1928	N	Burns 1933
Meringa	17.i.1929	N	Williams 1930
Cairns	x.1929	-	Upton 1949
Babinda	24.iii.1942	W of N	Caldwell 1963
Townsville	8-11, 28, 29.iii 1942 - 4.iv.1942	WNW	Caldwell 1963
Ingham-Tully	iii.1961	NNW	Straatman 1963
Iron Range	late x. - 2.xi.1974	SSE (30/min.)	Daniels 1975
Cairns	4.xi.1974	S (10/min.)	Daniels 1975
Westwood	9.xi.1974	S	Daniels 1975
Cairns	6.x.1966	SE	Obs. E. Corbet
Gordonvale-Cairns-Kuranda	10-20.ii.1968	N	Obs. I. Cunningham
Cairns	24.x.1968	SE	Obs. I. Cunningham
Cairns	25-30.x.1968	S	Obs. I. Corbet
Cairns	12-14.xii.1972	SE	Obs. C.N. Smithers

PAPILIONIDAE

Graphium eurypylus lycaon (C. and R. Felder)

This species has not been recorded as a migrant but was recorded as being not uncommon in the neighbourhood of Sydney (Olliff, 1888). Its appearance now in this area is, however, noteworthy. Table II gives the most recent records, which are few.

Comments. This species may be a migrant with specimens sometimes moving as far south as Sydney but detailed observations in more northerly areas are needed. Southerly records are for late January to late February.

Papilio demoleus sthenelus W. S. Macleay

As in the case of *Badamia exclamationis* this species has been confirmed as a strong migrant (Smithers and McArtney 1970; Dell 1977) but comparatively little detail has been recorded, the most detailed observations being those of Dell (*loc. cit.*) in Western Australia. Fenselau (1977) has recorded a southerly

Table II
Summary of possible migration records for *Graphium eurypylus lycaon*

Locality	Date	Reference
Sydney (Bayview)	25.ii.1970	Haines 1972
Sydney (Wahroonga)	26-27.ii.1971	Rose 1972
Sydney (Avalon Beach)	20.i.1962	Moulds 1963
Sydney (Greenwich)	24.ii.1962	Moulds 1963

movement in August at Sea Lake, Victoria. Table III summarizes other records for which adequate details are available.

Comments. This species appears to undertake somewhat sporadic migrations, the evidence for population movement often being the sudden appearance of the species in areas in which it is not usually resident.

Table III
Summary of movements and possible migrations of *Papilio demoleus sthenelus*

Locality	Date	Direction	Reference
Renner Springs, N.T.	13.v.1969	SE	C.N. Smithers and I.B. McArtney 1970
Sydney (several localities)	1-8.x.1971	sudden appearance in numbers	Rose 1972
Sydney (Ryde)	1.ii.1971	in flight with other spp.	Obs. J.V. Peters
Sydney (Cowan)	18.x.1973	seen	Obs. C.N. Smithers
Kingscliff (S. of Tweed Heads)	9.x.1976	S (50/min.)	Obs. S. Edwards
49 km N. of Singleton, N.S.W.	13-14.xi.1976	NE (10/5 hrs)	Obs. C.N. Smithers
Sea Lake, Victoria	late viii.1977	S (45 seen in three days)	Fenselau 1977

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A NEW SOUTHERN RECORD FOR *TISIPHONE HELENA* (OLLIFF) (LEPIDOPTERA: NYMPHALIDAE)

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In a recent paper (Moulds, 1977) the known distribution of *Tisiphone helena* (Olliff) was significantly extended, principally to the north. Mission Beach (between Innisfail and Tully) has remained the known southern limit for this butterfly species. I wish to record now a new southern locality.

Over a number of years I have collected butterflies at Mt Spec, some 70 km north of Townsville, mostly around the Paluma township which is at an altitude of about 900 m. During early January of 1974, 1975, 1976 and 1977 I noted and captured several specimens of *T. helena.* I recently spent three days at Paluma from 17th to 19th November 1977 when I found *T. helena* flying in numbers. Many were feeding at flowers along the roadside and one pair was seen mating. In a series collected males outnumbered females ten to one and all specimens appeared in a fresh and undamaged condition.

The discovery of this species around Paluma extends its known range some 120 km further south. Sword grass, *Gahnia* spp, upon which the larvae of this butterfly feed, also abounds at higher altitudes south of Townsville and it is therefore likely that the butterfly will also occur there.

Reference

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